

OIKE

## RAW SEQUENCE LISTING

DATE: 10/04/2001

PATENT APPLICATION: US/09/854,864

TIME: 08:21:00

Input Set : C:\Crf3\Datahold\09545199

Output Set: N:\CRF3\10042001\I854864.raw

C--&gt; 2 &lt;140&gt; CURRENT APPLICATION NUMBER: US/09/854,864

C--&gt; 2 &lt;141&gt; CURRENT FILING DATE: 2001-09-11

W--&gt; 2 &lt;151&gt; PRIOR FILING DATE: 1999-09-10

W--&gt; 0 &lt;110&gt; APPLICANT:

W--&gt; 0 &lt;120&gt; TITLE INVENTION:

W--&gt; 0 &lt;130&gt; FILE REFERENCE:

4 &lt;150&gt; PRIOR APPLICATION NUMBER: 60/128,689

5 &lt;151&gt; PRIOR FILING DATE: 1999-04-09

7 &lt;160&gt; NUMBER OF SEQ ID NOS: 165

9 &lt;170&gt; SOFTWARE: PatentIn Ver. 2.0

Patm 2.0 Errors: Patm 2.0 sometimes deletes  
Field 110 and Field 120. These headers and fields  
are mandatory.

Contact Robert Wax at OK  
(703) 306 4216 or 703 308 4119.

## ERRORED SEQUENCES

1952 &lt;210&gt; SEQ ID NO: 16

1953 &lt;211&gt; LENGTH: 2110

1954 &lt;212&gt; TYPE: PRT

1955 &lt;213&gt; ORGANISM: Pasteurella multocida

1957 &lt;400&gt; SEQUENCE: 16

1958 Met Gln Pro Ala Gln Glu His Cys Gln Arg Ile Asn Asn Ile Val Asn

1959 1 5 10 15

1961 Gln Glu Asn Gly Leu Phe His Thr Leu Gly Asn Met Met Leu Glu Ala

1962 20 25 30

1964 Glu Arg Ser Val Tyr Asn Ile Gly Asp Ile Tyr Ala Ser Lys Lys Leu

1965 35 40 45

1967 Thr Val His Thr His Asn Leu Ile Asn Asp Val Arg Leu Ser Gly Asn

1968 50 55 60

1970 Val Ser Tyr Lys Pro Ile Gly Ser Ser Arg Asp Tyr Asp Ile Ser Arg

1971 65 70 75 80

1973 Val Ala Val His Gly Trp His Asn Asn Val Tyr Lys Leu Asn Leu Asn

1974 85 90 95

1976 Leu Gln Glu Gln Asp Lys Thr Asp Ile Lys Val Val Lys Met Gly Ala

1977 100 105 110

1979 Ile Arg Ser Asp Gly Asp Phe Asp Phe Lys Gly Ile Lys Ala Thr Ser

1980 115 120 125

1982 Ser Glu Ser Lys Pro Gln Leu Ile Asn His Gly Leu Ile Asn Val Lys

1983 130 135 140

1985 Gly Thr Phe Asn Ala Glu Ala Asp Gln Val Val Asn Gln Met Lys Ala

1986 145 150 155 160

1988 Phe Asn Gln Asn Ala Leu Ala Ser Val Phe Lys Asn Pro Ala Lys Ile

1989 165 170 175

1991 Thr Met Tyr Tyr Gln Pro Leu Thr Arg Tyr Ile Trp Thr Pro Leu Ser

1992 180 185 190

1994 Gly Asn Ala Ser Arg Glu Phe Asn Asn Leu Glu Ser Phe Leu Asp Ala

1995 195 200 205

1997 Leu Phe Gly Ser Thr Thr Ile Leu Lys Ser Ser Phe Tyr Ser Thr Glu

1998 210 215 220

Erroneous Sequence Listing  
does not match diskette content

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2000	Asn	Phe	Ser	Ala	Tyr	Gln	Leu	Leu	Ser	His	Ile	Gln	His	Ser	Pro	Met
2001	225					230					235					240
2003	Tyr	Gln	Lys	Ala	Met	Ala	Gln	Val	Phe	Gly	Ala	Glu	Trp	His	Ser	Lys
2004				245						250						255
2006	Ser	Tyr	Asp	Glu	Met	Arg	Asn	Lys	Trp	Lys	Ser	Phe	Lys	Glu	Asn	Pro
2007				260					265						270	
2009	Thr	Asp	Phe	Ile	Tyr	Tyr	Pro	Ser	Glu	Lys	Ala	Lys	Ile	Leu	Ala	Gly
2010			275					280					285			
2012	Lys	Leu	Glu	Gly	Lys	Leu	Thr	Leu	Gln	Asn	Gly	Glu	Tyr	Ala	Glu	
2013		290					295				300					
2015	Arg	Gly	Lys	Phe	Asp	Glu	Ser	Ile	Gln	Ile	Gly	Lys	His	Gln	Leu	Ser
2016	305					310					315					320
2018	Leu	Pro	Ser	Val	Glu	Leu	Lys	Ala	Glu	Phe	Ser	Asp	Lys	Glu	Arg	Leu
2019				325						330						335
2021	Glu	Glu	Asp	Gly	Val	Asp	Leu	Ser	Ser	Ile	Ala	Glu	Leu	Leu	Glu	Met
2022				340					345						350	
2024	Pro	Asn	Leu	Phe	Ile	Asp	Asn	Ser	Ile	Gln	Leu	Glu	Lys	Lys	Lys	Leu
2025			355					360						365		
2027	Ser	Pro	Ile	Glu	Asp	Leu	Asp	Glu	Glu	Pro	Arg	Lys	Asn	Leu	Asp	Ile
2028		370					375					380				
2030	Glu	Glu	Ser	His	Ser	Asn	Ser	Ser	Asp	Asp	Val	Leu	Ser	Met	Asn	Asp
2031	385					390					395					400
2033	Asp	Glu	Ser	Asp	Thr	Asp	Asp	Ser	Lys	Trp	Ser	Met	Gly	Asn	Asp	Glu
2034				405						410						415
2036	Lys	Glu	Met	Pro	Asp	Asp	Lys	Leu	Gly	Ile	Ser	Arg	Asp	Asp	Arg	Gly
2037				420					425					430		
2039	Asn	Lys	Pro	Pro	Arg	Thr	Asp	Pro	Thr	Val	Asp	Tyr	Leu	Asn	Pro	Asp
2040			435					440					445			
2042	Glu	Phe	Glu	Asn	Gly	Tyr	Leu	Leu	Asn	Glu	Leu	Leu	Gln	Glu	Leu	
2043		450				455					460					
2045	Gly	Glu	Glu	Pro	Leu	Leu	Lys	Glu	Gly	Glu	Asp	His	Phe	Lys	Arg	Ser
2046	465					470					475					480
2048	Thr	Asn	Leu	Val	Arg	Leu	Gly	Glu	Arg	Asp	Arg	Gln	Asn	Arg	Glu	Lys
2049				485						490						495
2051	Arg	Glu	Lys	Glu	Gly	Tyr	Phe	Asp	Leu	Pro	Gly	Thr	Leu	Asp	Met	Lys
2052				500					505					510		
2054	Leu	Gln	Glu	Leu	Phe	Glu	Lys	Arg	Lys	Gln	Lys	His	Glu	Ala	Glu	Gln
2055			515					520					525			
2057	Lys	Ala	Arg	Ile	Glu	Lys	Ala	Leu	Leu	Gln	Lys	Ser	Glu	Gln	Gln	Glu
2058		530					535					540				
2060	Lys	Arg	Val	Glu	Glu	Arg	Lys	Gln	Glu	Glu	Lys	Arg	Gln	Ala	Gln	Asp
2061	545					550					555					560
2063	Lys	Ile	Ala	Lys	Gln	Val	Glu	Ile	Ala	Lys	Glu	Met	Gln	Arg	Val	Glu
2064				565						570						575
2066	Glu	Ile	Arg	Gln	Arg	Glu	Lys	Gln	Leu	Ala	Ile	Gln	Leu	Gln	Glu	Glu
2067				580					585					590		
2069	Glu	Lys	Lys	Gln	Gln	Glu	Glu	Lys	His	Leu	Ser	Glu	Glu	Lys	Lys	Gln
2070			595					600					605			
2072	Ala	Glu	Gln	Lys	Gln	Lys	Ala	Glu	Glu	Lys	Val	Ala	Gln	Glu	Arg	Leu

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Input Set : C:\Crf3\Datahold\09545199

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	610		615		620										
2073															
2075	Asp	Ile	Glu	Gln	Gln	Lys	Ala	Tyr	Glu	Glu	Met	Ala	Lys	Arg	Glu
2076	625					630					635				640
2078	Glu	Ala	Ser	Lys	Asn	Val	Leu	Leu	Lys	Ala	Ile	Asp	Glu	Glu	Arg
2079					645					650					655
2081	Lys	Val	Glu	Thr	Asp	Pro	Leu	Phe	Arg	Thr	Lys	Leu	Lys	Tyr	Ile
2082				660					665					670	
2084	Gln	Asp	Asp	Tyr	Ala	Gly	Ala	Asn	Tyr	Phe	Phe	Asn	Lys	Val	Gly
2085			675					680				685			
2087	Asn	Thr	Lys	Gly	His	Gln	Lys	Val	Asn	Val	Leu	Gly	Asp	Asn	Tyr
2088		690				695					700				
2090	Asp	His	Gln	Val	Ile	Thr	Arg	Ser	Ile	Glu	Lys	Lys	Val	Asp	Asn
2091	705					710				715					720
2093	Leu	Asn	Gln	Lys	Tyr	Asn	Leu	Ser	Asp	Val	Glu	Leu	Val	Lys	Gln
2094				725					730					735	
2096	Met	Asp	Asn	Ser	Thr	Thr	Gln	Ala	Gln	Glu	Leu	Asp	Leu	Lys	Leu
2097				740					745				750		
2099	Ala	Ala	Leu	Thr	Lys	Glu	Gln	Gln	Ala	Asn	Leu	Thr	Gln	Asp	Ile
2100			755				760				765				
2102	Trp	Tyr	Val	Lys	Thr	Lys	Val	Lys	Gly	Lys	Asp	Val	Phe	Val	Pro
2103		770				775					780				
2105	Val	Tyr	Phe	Ala	Ser	Glu	Thr	Leu	Val	Glu	Ala	Gln	Lys	Leu	Gln
2106	785					790				795					800
2108	Leu	Gly	Thr	Gly	Thr	Ile	Arg	Val	Gly	Glu	Ala	Lys	Ile	Lys	Ala
2109				805					810						815
2111	Asp	Val	Val	Asn	Thr	Gly	Thr	Leu	Ala	Gly	Arg	Lys	Leu	Asn	Val
2112			820					825					830		
2114	Ala	Ser	Asn	Lys	Ile	Lys	Asn	Gln	Gly	Ser	Ile	Leu	Ser	Thr	Gln
2115		835					840					845			
2117	Thr	Arg	Leu	Val	Gly	Arg	Lys	Gly	Ile	Glu	Asn	Val	Ser	Arg	Ser
2118		850				855						860			
2120	Ala	Asn	Asp	Glu	Leu	Gly	Val	Thr	Ala	Gln	Arg	Ser	Glu	Ile	Lys
2121	865					870				875					880
2123	Glu	Gly	His	Leu	His	Leu	Glu	Thr	Asp	Lys	Asp	Ser	Thr	Ile	Asp
2124				885					890						895
2126	Gln	Ala	Ser	Asp	Ile	Lys	Ala	Lys	Thr	Ser	Phe	Val	Lys	Thr	Gly
2127			900						905					910	
2129	Val	Asn	Leu	Lys	Asn	Thr	Tyr	Asn	Thr	Lys	His	Ala	Tyr	Arg	Glu
2130		915						920					925		
2132	Phe	Ser	Pro	Ser	Ala	Leu	Gln	Val	Ala	Glu	Leu	Asp	Val	Ala	Gly
2133		930					935					940			
2135	Lys	Val	Pro	Leu	Leu	Gly	Val	Ser	Ser	Pro	Ser	Ser	Tyr	Ser	Glu
2136	945					950				955					960
2138	Thr	Ser	Glu	Ala	Thr	Ser	Glu	Gly	Ser	Ile	Phe	Glu	Val	Gly	His
2139				965					970						975
2141	His	Leu	Ala	Val	Asp	Arg	Asp	Val	Asn	Gln	Ala	Gly	Ser	Lys	Ile
2142			980						985					990	
2144	Ala	Lys	Tyr	Thr	Thr	Gly	Val	Val	Lys	Gly	Asn	Phe	Asn	Thr	Glu
2145		995					1000							1005	

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```

2147 Gly Lys Asn Ile Lys His Val Glu Lys Glu Glu Tyr Ser Ser Gln Leu
2148      1010                      1015                      1020
2150 Phe Ala Ser Ala His Ala Ser Gly Gly Gly Thr Ser Val Arg Tyr Asp
E--> 2151 025      1030                      1035                      1040
2153 Tyr Asn Ser Gln Asp Gly Gly Asn Ala Ser Val Gly Val Pro Thr Asn
2154      1045                      1050                      1055
2156 His Thr Gly Val Gly Ala Glu Ala Gly Met Ser Phe Thr His Thr Lys
2157      1060                      1065                      1070
2159 Asp Lys Glu Thr Leu Leu Thr His Thr Asn Ser Glu Leu Gln Val Lys
2160      1075                      1080                      1085
2162 His Gly Lys Leu His Val Leu Gly Tyr Ala Asp Ile Gly Gly Val Asp
2163      1090                      1095                      1100
2165 Ile Asn Thr Lys Leu Pro Glu Asp Ala Gln Ser Lys Ala Gln Lys Glu
E--> 2166 105      1110                      1115                      1120
2168 Ile Ala Ala Ser Lys Pro Glu Lys Thr Glu Gln Ser Ala Gln Asp Val
2169      1125                      1130                      1135
2171 Ala Gln Ala Gln Ser Asn Ala Asn Lys Asp Lys Glu Asn Lys Ala Pro
2172      1140                      1145                      1150
2174 Glu Ile Lys Glu Leu Ser Glu Ala Glu Ile Ala Asp Leu Met Ser Glu
2175      1155                      1160                      1165
2177 Lys Ser Lys Ala Tyr Phe Asp Asp Phe Ala Glu Gln Ala Lys Lys Ala
2178      1170                      1175                      1180
2180 Pro Glu Asn Asn Arg Phe Glu Leu Ser Ala Lys Glu Ile Lys Ser Ser
E--> 2181 185      1190                      1195                      1200
2183 Lys Gln Lys Asp Gln Tyr Asp His Glu Ser Glu Arg Thr Thr Phe Lys
2184      1205                      1210                      1215
2186 Val Gly Pro Glu Ala Glu Ala His Ser Ala Val Ala Asp Met Val Ser
2187      1220                      1225                      1230
2189 His Leu Val Lys Glu Tyr Arg Asp Ala Gln Asn Gly Thr Lys Gln Asp
2190      1235                      1240                      1245
2192 Gly Thr Val Ala Leu Gln His Ala Ser Asp Val Leu Asn Ile Val Thr
2193      1250                      1255                      1260
2195 Gly Asp Leu Ala Gly Ser Ser Ala Lys Leu Ser Val Glu Arg Thr His
E--> 2196 265      1270                      1275                      1280
2198 Glu Thr Lys Arg Thr Thr Glu Thr Gly Asp Ile Val Thr Lys Ile Gly
2199      1285                      1290                      1295
2201 Gly Asn Val Thr Leu Ser Ala Arg Ser Gly Ser Val Asn Leu Lys Asn
2202      1300                      1305                      1310
2204 Val Gln Ser Asp Glu Gln Ala Asn Leu Thr Leu Arg Ala Lys Glu Asp
2205      1315                      1320                      1325
2207 Val Asn Val Leu Ser Gly Glu Lys Thr Arg Glu Thr Thr Glu Thr Val
2208      1330                      1335                      1340
2210 Ser Arg Gln Lys Leu Ser His Gly Val Asn Ala Gly Cys Ser Met Met
E--> 2211 345      1350                      1355                      1360
2213 Ser Gly Ala Cys Thr Ala Gly Val Ser Thr Ser Leu Glu Gly Asn Glu
2214      1365                      1370                      1375
2216 Ser Tyr Thr Ser Glu Arg Glu Thr Ala Gln Asn Asn Ser Phe Leu Lys
2217      1380                      1385                      1390
2219 Ala Arg Asn Met Lys Val Glu Ala Gly Arg Asp Phe Asn Val Val Ser

```

should be  
1345

P Misaligned amino numbering  
The first digit in the number must be aligned directly  
underneath the ~~seq~~ ~~second~~ first alpha character of the  
amino abbreviation.

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```

2220      1395      1400      1405
2222 Ser Asn Ile Asp Ala Asp Lys Leu Asp Leu His Val Lys Gly Lys Thr
2223      1410      1415      1420
2225 Asn Val Val Ser Lys Gln Asp Thr Leu Gln Lys Val Thr His Gly Val
E--> 2226 425      1430      1435      1440
2228 Asp Tyr Asn Leu Ser Ala Gly Val Ala Leu Ser Ser Ala Thr Ile Ala
2229      1445      1450      1455
2231 Thr Pro Thr Gly Asn Val Gly Phe Gly Tyr Thr Asn Glu Thr Glu Ser
2232      1460      1465      1470
2234 Lys Arg Thr Val Asn Gln Gln Ala Gly Ile Lys Ala Asn Lys Ile Thr
2235      1475      1480      1485
2237 Gly Gln Thr His Asp Leu Asn Leu Glu Gly Gly Tyr Leu Val Ser Asn
2238      1490      1495      1500
2240 Asp Lys Asp Asn Gln Leu Lys Val Thr Gly Asp Val Thr Thr Lys Ala
E--> 2241 505      1510      1515      1520
2243 Leu His Asp Gln His Asp Lys Asp Gly Gly Thr Phe Gly Leu Ser Val
2244      1525      1530      1535
2246 Gly Ile Ser Glu Arg Gly Thr Thr Ala Phe Asn Val Arg Gly Gly Arg
2247      1540      1545      1550
2249 Ala Glu Gln Lys His Tyr Asn Ala Thr Gln Lys Ser Thr Leu Ser Gly
2250      1555      1560      1565
2252 Val Asp Thr Ser Gln Ala Asn Val Ser Gly Gln Val Asn Thr Asp Leu
2253      1570      1575      1580
2255 Thr Lys Ala Lys Ala Val Thr Arg Asp Asp Thr Tyr Ala Ser Thr Gln
E--> 2256 585      1590      1595      1600
2258 Phe Ser Phe Glu Val Ala Asp Ile Val Glu Leu Gly Gln Arg Ala Lys
2259      1605      1610      1615
2261 Asn Lys Leu Ser Ala Pro Asn Asn Asp Thr Asp Met Ala Ser Gly Ser
2262      1620      1625      1630
2264 Thr Leu Arg Ser Arg Ser Thr Thr Glu Glu Ala Asp Val Pro Thr Thr
2265      1635      1640      1645
2267 Arg Ser Arg Val Thr Asp Glu Ala Asp Ser Val Ser Val Lys Asn Pro
2268      1650      1655      1660
2270 Ile Tyr Glu Ser Ala Asp Ala Val Val Pro Thr Pro Arg Ser Arg Asn
E--> 2271 665      1670      1675      1680
2273 Val Asp Ser Thr Asp Leu Val Asp Asn Pro Leu Tyr Ala Ser Ala Thr
2274      1685      1690      1695
2276 Thr Lys Ala Asn Ile His Asp Tyr Glu Glu Ile Pro Ala Val Tyr Ser
2277      1700      1705      1710
2279 Lys Val Gly Asp Asn Asn Ala Asp Leu Val Arg His Lys Thr Ala Thr
2280      1715      1720      1725
2282 Ser Asp Glu His Leu Tyr Ala Glu Ile Asn Glu Pro Thr Tyr Ser Arg
2283      1730      1735      1740
2285 Val Gly Asp Lys Asn Ala Asp Met Arg Arg His Asn Ala Ala Gly Thr
E--> 2286 745      1750      1755      1760
2288 Thr Asp Tyr Ala Asp Val Val Gln Ala His Thr Arg Lys Ala Asp Asp
2289      1765      1770      1775
2291 Pro Leu Pro Ala Leu Pro Asn Gln Gly Lys Ala Arg Thr Val Asn Asp
2292      1780      1785      1790

```

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```

2294 Gly Ser Glu His Ile Tyr Thr Asp Ile Ser Asp Val Gly Thr Gln Thr
2295          1795          1800          1805
2297 Lys Ala Ile Asp Ser Thr Tyr Ala Thr Val Gly Met Pro Lys Ala Asn
2298          1810          1815          1820
2300 Ala Val Asn Leu Ile Gly Gln Asn Gly Leu Gly Ser Ile Tyr His Ser
E--> 2301 825          1830          1835          1840
2303 Pro Asp Ser Ala Tyr Lys Thr Trp Gln Leu Leu Asp Gln Phe Ala Asn
2304          1845          1850          1855
2306 Lys Gly Gly Asp Ala Val Phe Leu Arg Pro Ala Thr Glu Met Lys Cys
2307          1860          1865          1870
2309 Ala Gly Ala Pro Leu Lys Tyr Thr Phe Ile Val Arg Asp Tyr Leu Leu
2310          1875          1880          1885
2312 Arg Arg His Thr Leu Asp Lys Ser Arg Leu Phe Tyr Asn Ala His Asn
2313          1890          1895          1900
2315 Lys Thr Leu Phe Ser Val Pro Ile Val Asp Ala Lys Val Lys Met Leu
E--> 2316 905          1910          1915          1920
2318 Phe Ala Glu Lys Asn Ile Gln Val Asn Tyr Asp Arg Ser Leu Thr Ala
2319          1925          1930          1935
2321 Ile Asp Leu Ser Lys Arg Ile Ala Thr Phe Asn Ser Pro Glu Gly Val
2322          1940          1945          1950
2324 Val Glu Val Pro Tyr Asp Phe Ile Asn Val Val Pro Pro Met Arg Ala
2325          1955          1960          1965
2327 Pro Asp Ala Val Arg Gln Ser Ala Leu Ala Trp Gln Glu Gly Lys Trp
2328          1970          1975          1980
2330 Ala Asn Asp Gly Trp Val Glu Val Glu Lys His Thr Leu Arg His Arg
E--> 2331 985          1990          1995          2000
2333 Arg Tyr Ala Asn Val Phe Ala Val Gly Asp Val Ala Gly Val Pro Lys
2334          2005          2010          2015
2336 Gly Lys Thr Ala Ala Ser Val Lys Trp Gln Val Pro Val Ala Val Ala
2337          2020          2025          2030
2339 His Leu Leu Ala Glu Leu Glu Gly Lys Pro Cys Asp Glu Ile Tyr Asn
2340          2035          2040          2045
2342 Gly Tyr Thr Ser Cys Pro Leu Ile Thr Gln Leu Gly Lys Gly Met Leu
2343          2050          2055          2060
2345 Val Glu Phe Asp Tyr Asn Asn His Leu Thr Pro Ser Phe Pro Gly Val
E--> 2346 065          2070          2075          2080
2348 Ile Ala Pro Leu Glu Glu Leu Trp Ala Thr Trp Ala Ile Lys Thr Leu
2349          2085          2090          2095
2351 Gly Leu Lys Pro Thr Tyr Leu Gly Met Leu Arg Gly Leu Ala
2352          2100          2105          2110
3855 <210> SEQ ID NO: 28
3856 <211> LENGTH: 450
3857 <212> TYPE: PRT
3858 <213> ORGANISM: Pasteurella multocida
3860 <400> SEQUENCE: 28
3861 Ser Thr Lys Val Gly Tyr Asp Ile Asn Asn Thr His Arg Phe Thr Leu
3862 1 5 10 15
3864 Phe Leu Glu Asp Arg Arg Glu Lys Lys Leu Thr Glu Glu Lys Thr Leu
3865 20 25 30

```

Errors: At locations 125 through  
location 151 there are unknowns, 'Xaas'.  
Xaas must be enumerated in labels  
221, 222 and 223

Misaligned amino numbering  
First number must align directly beneath first letter

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```

3867 Gly Leu Ser Asp Ala Val Arg Phe Ala Asn Asp Gln Thr Pro Tyr Leu
3868          35          40          45
3870 Arg Tyr Gly Ile Glu Tyr Arg Tyr Asn Gly Leu Ser Trp Leu Glu Thr
3871          50          55          60
3873 Val Lys Leu Phe Leu Ala Lys Gln Lys Ile Glu Gln Arg Ser Ala Leu
3874 65          70          75          80
3876 Gln Glu Phe Asp Ile Asn Asn Arg Asn Lys Leu Asp Ser Thr Met Ser
3877          85          90          95
3879 Phe Val Tyr Leu Gln Arg Gln Asn Ile Ala Arg Gly Glu Phe Ser Thr
3880          100          105          110
E--> 3882 Ser Pro Leu Tyr Trp Gly Pro Ser Arg His Arg Leu Xaa Ala Lys Phe
3883          115          120          125
E--> 3885 Glu Phe Arg Asp Xaa Phe Leu Glu Asn Met Asn Lys Xaa Phe Thr Phe
3886          130          135          140
E--> 3888 Arg Pro Trp Gln Ile Asn Xaa Phe Arg Gln Gln Gly Arg Asn Asn Tyr
3889 145          150          155          160
3891 Thr Glu Val Phe Pro Val Lys Ser Arg Glu Phe Ser Phe Ser Leu Met
3892          165          170          175
3894 Asp Asp Ile Lys Ile Gly Glu Leu Leu His Leu Gly Leu Gly Gly Arg
3895          180          185          190
3897 Trp Asp His Tyr Asn Tyr Lys Pro Leu Leu Asn Ser Gln His Asn Ile
3898          195          200          205
3900 Asn Arg Thr Gln Arg Leu Pro Tyr Pro Lys Thr Ser Ser Lys Phe Ser
3901          210          215          220
3903 Tyr Gln Leu Ser Leu Glu Tyr Gln Leu His Pro Ser His Gln Ile Ala
3904 225          230          235          240
3906 Tyr Arg Leu Ser Thr Gly Phe Arg Val Pro Arg Val Glu Asp Leu Tyr
3907          245          250          255
3909 Phe Glu Asp Arg Gly Lys Ser Ser Ser Gln Phe Leu Pro Asn Pro Asp
3910          260          265          270
3912 Leu Gln Pro Glu Thr Ala Leu Asn His Glu Ile Ser Tyr Arg Phe Gln
3913          275          280          285
3915 Asn Gln Tyr Ala His Phe Ser Val Gly Leu Phe Arg Thr Arg Tyr His
3916          290          295          300
3918 Asn Phe Ile Gln Glu Arg Glu Met Thr Cys Asp Lys Ile Pro Tyr Glu
3919 305          310          315          320
3921 Tyr Asn Arg Thr Tyr Gly Tyr Cys Thr His Asn Thr Tyr Val Met Phe
3922          325          330          335
3924 Val Asn Glu Pro Glu Ala Val Ile Lys Gly Val Glu Val Ser Gly Ala
3925          340          345          350
3927 Leu Asn Gly Ser Ala Phe Gly Leu Ser Asp Gly Leu Thr Phe Arg Leu
3928          355          360          365
3930 Lys Gly Ser Tyr Ser Lys Gly Gln Asn His Asp Gly Asp Pro Leu Lys
3931          370          375          380
3933 Ser Ile Gln Pro Trp Thr Val Val Thr Gly Ile Asp Tyr Glu Thr Glu
3934 385          390          395          400
3936 Gly Trp Ser Val Ser Leu Ser Gly Arg Tyr Ser Ala Ala Lys Lys Ala
3937          405          410          415
3939 Lys Asp Ala Ile Glu Thr Glu Tyr Thr His Asp Lys Lys Val Val Lys

```

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Input Set : C:\Crif3\Datahold\09545199  
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3940 420 425 430  
3942 Gln Trp Pro His Leu Ser Pro Ser Tyr Phe Val Val Asp Phe Thr Gly  
3943 435 440 445  
3945 Gln Val  
3946 450  
5300 <210> SEQ ID NO: 36  
5301 <211> LENGTH: 302  
5302 <212> TYPE: PRT  
5303 <213> ORGANISM: Pasteurella multocida  
5305 <400> SEQUENCE: 36  
5306 Met Asn Ile Leu Phe Val Ser Asp Asp Val Tyr Ala Lys His Leu Val  
5307 1 5 10 15  
5309 Val Ala Ile Lys Ser Ile Ile Asn His Asn Glu Lys Gly Ile Ser Phe  
5310 20 25 30  
5312 Tyr Ile Phe Asp Leu Gly Ile Lys Asp Glu Asn Lys Arg Asn Ile Asn  
5313 35 40 45  
5315 Asp Ile Val Ser Ser Tyr Gly Ser Glu Val Asn Phe Ile Ala Val Asn  
5316 50 55 60  
5318 Glu Lys Glu Phe Glu Ser Phe Pro Val Gln Ile Ser Tyr Ile Ser Leu  
5319 65 70 75 80  
5321 Ala Thr Tyr Ala Arg Leu Lys Ala Ala Glu Tyr Leu Pro Asp Asn Leu  
5322 85 90 95  
5324 Asn Lys Ile Ile Tyr Leu Asp Val Asp Val Leu Val Phe Asn Ser Leu  
5325 100 105 110  
5327 Glu Met Leu Trp Asn Val Asp Val Asn Asn Phe Leu Thr Ala Ala Cys  
5328 115 120 125  
5330 Tyr Asp Ser Phe Ile Glu Asn Glu Lys Ser Glu His Lys Lys Ser Ile  
5331 130 135 140  
5333 Ser Met Ser Asp Lys Glu Tyr Tyr Phe Asn Ala Gly Val Met Leu Phe  
5334 145 150 155 160  
5336 Asn Leu Asp Glu Trp Arg Lys Met Asp Val Phe Ser Arg Ala Leu Asp  
5337 165 170 175  
5339 Leu Leu Ala Met Tyr Pro Asn Gln Met Ile Tyr Gln Asp Gln Asp Ile  
5340 180 185 190  
5342 Leu Asn Ile Leu Phe Arg Asn Lys Val Cys Tyr Leu Asp Cys Arg Phe  
5343 195 200 205  
E--> 5345 Asn Phe Met Pro Asn Gln Leu Glu Arg Ile Xaa Gln Tyr His Lys Gly  
5346 210 215 220  
E--> 5348 Lys Xaa Ser Asn Leu His Ser Leu Glu Lys Thr Thr Met Pro Val Val  
5349 225 230 235 240  
5351 Ile Ser His Tyr Cys Gly Pro Glu Lys Ala Trp His Ala Asp Cys Lys  
5352 245 250 255  
E--> 5354 His Phe Asn Val Tyr Phe Tyr Gln Lys Ile Leu Ala Xaa Xaa Ser Arg  
5355 260 265 270  
E--> 5357 Gly Xaa Asp Lys Glu Arg Val Leu Ser Ile Lys Thr Tyr Leu Lys Ala  
5358 275 280 285  
5360 Leu Ile Arg Arg Ile Arg Tyr Lys Phe Lys Tyr Gln Val Tyr  
5361 290 295 300  
5472 <210> SEQ ID NO: 38

There are unknowns at locations 219 through 274.  
Unknowns must be enumerated in fields 221, 222 and 223.



## RAW SEQUENCE LISTING

DATE: 10/04/2001

PATENT APPLICATION: US/09/854,864

TIME: 08:21:01

Input Set : C:\Crf3\Datahold\09545199

Output Set: N:\CRF3\10042001\I854864.raw

5473 <211> LENGTH: 166  
 5474 <212> TYPE: PRT  
 5475 <213> ORGANISM: Pasteurella multocida  
 5477 <400> SEQUENCE: 38  
 5478 Leu Asn Lys Ala Gly Lys Ile Gln Tyr Val Leu Leu Lys Gly Asn Gln  
 5479 1 5 10 15  
 5481 Gly His Pro Asp Ala Glu Ala Arg Thr Lys Phe Val Ile Lys Glu Leu  
 5482 20 25 30  
 E--> 5484 Xaa Asn Lys Gly Ile Gln Asp Glu Gln Leu Phe Ile Asp Thr Gly Met  
 5485 35 40 45  
 5487 Trp Asp Ala Ala Leu Ala Lys Asp Lys Met Asp Ala Trp Leu Ser Ser  
 5488 50 55 60  
 5490 Ser Lys Ala Asn Gln Ile Glu Val Ile Ile Ala Asn Asn Asp Gly Met  
 5491 65 70 75 80  
 5493 Ala Met Gly Ala Leu Glu Ala Thr Lys Ala His Gly Lys Lys Leu Pro  
 5494 85 90 95  
 E--> 5496 Ile Phe Xaa Val Xaa Ala Leu Pro Glu Val Leu Gln Leu Ile Lys Lys  
 5497 100 105 110  
 5499 Gly Glu Ile Ala Gly Thr Val Leu Asn Asp Gly Val Asn Gln Gly Lys  
 5500 115 120 125  
 5502 Ala Val Val Gln Leu Ser Asn Asn Leu Ala Lys Gly Lys Pro Ala Thr  
 5503 130 135 140  
 5505 Glu Gly Thr Lys Trp Gln Leu Lys Arg Ser Cys Pro Thr Tyr Pro Leu  
 5506 145 150 155 160  
 5508 Cys Trp Cys Gly Cys Gly  
 5509 165  
 11512 <210> SEQ ID NO: 103  
 11513 <211> LENGTH: 1643  
 11514 <212> TYPE: PRT  
 11515 <213> ORGANISM: Pasteurella multocida  
 11517 <400> SEQUENCE: 103  
 11518 Met Asn Lys Asn Arg Tyr Lys Leu Ile Phe Ser Gln Val Lys Gly Cys  
 11519 1 5 10 15  
 11521 Leu Val Pro Val Ala Glu Cys Ile Asn Ser Ala Ile Ser Asn Gly Ser  
 11522 20 25 30  
 11524 Ser Asp Ser Thr Ser Thr Ser Glu Gln Val Glu Glu Glu Pro Phe Leu  
 11525 35 40 45  
 11527 Leu Glu Gln Tyr Ser Leu Ser Ser Val Ser Leu Leu Val Lys Ser Thr  
 11528 50 55 60  
 11530 Phe Asn Pro Val Ser Tyr Ala Met Gln Leu Thr Trp Lys Gln Leu Ser  
 11531 65 70 75 80  
 11533 Ile Leu Phe Leu Thr Val Ile Ser Val Pro Val Leu Ala Glu Gly Lys  
 11534 85 90 95  
 11536 Gly Asp Glu Arg Asn Gln Leu Thr Val Ile Asp Asn Ser Asp His Ile  
 11537 100 105 110  
 11539 Lys Leu Asp Ala Ser Asn Leu Ala Gly Asn Asp Lys Thr Lys Ile Tyr  
 11540 115 120 125  
 11542 Gln Ala Glu Asn Lys Val Leu Val Ile Asp Ile Ala Lys Pro Asn Gly  
 11543 130 135 140

There are unknowns (Xaas) found  
 at ~~for~~ locations 33 through 101.  
 Mandatory descriptions are required in  
 fields 221, 222 and 223.

An unknown is located in position 1632; Description  
 Description of unknown is required in fields  
 221, 222 and 223

## RAW SEQUENCE LISTING

DATE: 10/04/2001

PATENT APPLICATION: US/09/854,864

TIME: 08:21:02

Input Set : C:\Crf3\Datahold\09545199

Output Set: N:\CRF3\10042001\I854864.raw

```

11545 Lys Gly Ile Ser Asp Asn Arg Phe Glu Lys Phe Asn Ile Pro Asn Ser
11546 145 150 155 160
11548 Ala Val Phe Asn Asn Asn Gly Thr Glu Ala Gln Ala Arg Ser Thr Leu
11549 165 170 175
11551 Ile Gly Tyr Ile Pro Gln Asn Gln Asn Leu Arg Gly Gly Lys Glu Ala
11552 180 185 190
11554 Asp Val Ile Leu Asn Gln Val Thr Gly Pro Gln Glu Ser Lys Ile Val
11555 195 200 205
11557 Gly Ala Leu Glu Val Leu Gly Lys Lys Ala Asp Ile Val Ile Ala Asn
11558 210 215 220
11560 Gln Asn Gly Ile Thr Leu Asn Gly Val Arg Thr Ile Asn Ser Asp Arg
11561 225 230 235 240
11563 Phe Val Ala Thr Thr Ser Glu Leu Ile Asp Pro Asn Gln Met Met Leu
11564 245 250 255
11566 Lys Val Thr Lys Gly Asn Val Ile Ile Asp Ile Asp Gly Phe Ser Thr
11567 260 265 270
11569 Asp Gly Leu Lys Tyr Leu Asp Ile Ile Ala Lys Lys Ile Glu Gln Lys
11570 275 280 285
11572 Gln Ser Ile Thr Ser Gly Asp Asn Ser Glu Ala Lys Thr Asp Val Thr
11573 290 295 300
11575 Leu Ile Ala Gly Ser Ser Glu Tyr Asp Leu Ser Lys His Glu Leu Lys
11576 305 310 315 320
11578 Lys Thr Ser Gly Glu Asn Val Ser Asn Asp Val Ile Ala Ile Thr Gly
11579 325 330 335
11581 Ser Ser Thr Gly Ala Met His Gly Lys Asn Ile Lys Leu Ile Val Thr
11582 340 345 350
11584 Asp Lys Gly Ala Gly Val Lys His Asp Gly Ile Ile Leu Ser Glu Asn
11585 355 360 365
11587 Asp Ile Gln Ile Glu Met Asn Glu Gly Asp Leu Glu Leu Gly Asn Thr
11588 370 375 380
11590 Ile Gln Gln Thr Val Val Lys Lys Asp Arg Asn Ile Arg Ala Lys Lys
11591 385 390 395 400
11593 Lys Ile Glu Val Lys Asn Ala Asn Arg Val Phe Val Gly Ser Gln Thr
11594 405 410 415
11596 Lys Ser Asp Glu Ile Ser Leu Glu Ala Lys Gln Val Lys Ile Arg Lys
11597 420 425 430
11599 Asn Ala Glu Ile Arg Ser Thr Thr Gln Ala Lys Ile Val Ala Lys Gly
11600 435 440 445
11602 Ala Leu Ser Ile Glu Gln Asn Ala Lys Leu Val Ala Lys Lys Ile Asp
11603 450 455 460
11605 Val Ala Thr Glu Thr Leu Thr Asn Ala Gly Arg Ile Tyr Gly Arg Glu
11606 465 470 475 480
11608 Val Lys Leu Asp Thr Asn Asn Leu Ile Asn Asp Lys Glu Ile Tyr Ala
11609 485 490 495
11611 Glu Arg Lys Leu Ser Ile Leu Thr Lys Gly Lys Asp Leu Glu Ile Ile
11612 500 505 510
11614 Gln Asp Arg Tyr Leu Ser Pro Leu Met Arg Val Lys Ser Ser Val Arg
11615 515 520 525
11617 Phe Leu Gly Ser Pro Phe Phe Ser Ile Ser Pro Ser Met Leu Ala Ser

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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/854,864

DATE: 10/04/2001

TIME: 08:21:02

Input Set : C:\Crf3\Datahold\09545199

Output Set: N:\CRF3\10042001\I854864.raw

11618	530	535	540
11620	Leu Ser Ala Gln Phe Lys Pro Gly Phe Val Asn Lys Gly Leu Ile Glu		
11621	545	550	555
11623	Ser Ala Gly, Ser Ala Glu Leu Thr Phe Lys Glu Lys Thr Ser Phe Leu		
11624		565	570
11626	Thr Glu Gly Asn Asn Phe Ile Arg Ala Lys Asp Ala Leu Thr Ile Asn		
11627		580	585
11629	Ala Gln Asn Ile Glu Ile Asp Lys Asn Gln Asp Ile Gln Leu Gly Ala		
11630		595	600
11632	Asn Ile Thr Leu Asn Val Glu Glu Asn Phe Val Asn Arg Ala Gly Thr		
11633		610	615
11635	Leu Ala Thr Gly Lys Thr Leu Thr Ile Asn Thr Glu Ser Gly Ser Ile		
11636	625	630	635
11638	Tyr Asn Leu Gly Gly Thr Leu Gly Ala Gly Lys Ser Leu Lys Leu Thr		
11639		645	650
11641	Ala Lys Ser Thr Glu Glu Gly Met Gly Asn Ile Val Asn Gln Glu Asn		
11642		660	665
11644	Gly Leu Phe His Thr Leu Gly Asn Met Met Leu Glu Ala Glu Arg Ser		
11645		675	680
11647	Val Tyr Asn Ile Gly Asp Ile Tyr Ala Ser Lys Lys Leu Thr Val His		
11648		690	695
11650	Thr His Asn Leu Ile Asn Asp Val Arg Leu Ser Gly Asn Val Ser Tyr		
11651	705	710	715
11653	Lys Pro Ile Gly Ser Ser Arg Asp Tyr Asp Ile Ser Arg Val Ala Val		
11654		725	730
11656	His Gly Trp His Asn Asn Val Tyr Lys Leu Asn Leu Asn Leu Glu		
11657		740	745
11659	Gln Asp Lys Thr Asp Ile Lys Val Val Lys Met Gly Ala Ile Arg Ser		
11660		755	760
11662	Asp Gly Asp Phe Asp Phe Lys Gly Ile Lys Ala Thr Ser Ser Glu Ser		
11663		770	775
11665	Lys Pro Gln Leu Ile Asn His Gly Leu Ile Asn Val Lys Gly Thr Phe		
11666	785	790	795
11668	Asn Ala Glu Ala Asp Gln Val Val Asn Gln Met Lys Ala Phe Asn Gln		
11669		805	810
11671	Asn Ala Leu Ala Ser Val Phe Lys Asn Pro Ala Lys Ile Thr Met Tyr		
11672		820	825
11674	Tyr Gln Pro Leu Thr Arg Tyr Ile Trp Thr Pro Leu Ser Gly Asn Ala		
11675		835	840
11677	Ser Arg Glu Phe Asn Asn Leu Glu Ser Phe Leu Asp Ala Leu Phe Gly		
11678		850	855
11680	Ser Thr Thr Ile Leu Lys Ser Ser Phe Tyr Ser Thr Glu Asn Phe Ser		
11681	865	870	875
11683	Ala Tyr Gln Leu Leu Ser His Ile Gln His Ser Pro Met Tyr Gln Lys		
11684		885	890
11686	Ala Met Ala Gln Val Phe Gly Ala Glu Trp His Ser Lys Ser Tyr Asp		
11687		900	905
11689	Glu Met Arg Asn Lys Trp Lys Ser Phe Lys Glu Asn Pro Thr Asp Phe		
11690		915	920

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/854,864

DATE: 10/04/2001

TIME: 08:21:02

Input Set : C:\Crf3\Datahold\09545199

Output Set: N:\CRF3\10042001\I854864.raw

```

11692 Ile Tyr Tyr Pro Ser Glu Lys Ala Lys Ile Leu Ala Gly Lys Leu Glu
11693      930      935      940
11695 Gly Lys Leu Thr Thr Leu Gln Asn Gly Glu Tyr Ala Glu Arg Gly Lys
11696 945      950      955      960
11698 Phe Asp Glu Ser Ile Gln Ile Gly Lys His Gln Leu Ser Leu Pro Ser
11699      965      970      975
11701 Val Glu Leu Lys Ala Glu Phe Ser Asp Lys Glu Arg Leu Glu Glu Asp
11702      980      985      990
11704 Gly Val Asp Leu Ser Ser Ile Ala Glu Leu Leu Glu Met Pro Asn Leu
11705      995      1000      1005
11707 Phe Ile Asp Asn Ser Ile Gln Leu Glu Lys Lys Lys Leu Ser Pro Ile
11708      1010      1015      1020
11710 Glu Asp Leu Asp Glu Glu Pro Arg Lys Asn Leu Asp Ile Glu Glu Ser
11711 1025      1030      1035      1040
11713 His Ser Asn Ser Ser Asp Asp Val Leu Ser Met Asn Asp Asp Glu Ser
11714      1045      1050      1055
11716 Asp Thr Asp Asp Ser Lys Trp Ser Met Gly Asn Asp Glu Lys Glu Met
11717      1060      1065      1070
11719 Pro Asp Asp Lys Leu Gly Ile Ser Arg Asp Asp Arg Gly Asn Lys Pro
11720      1075      1080      1085
11722 Pro Arg Thr Asp Pro Thr Val Asp Tyr Leu Asn Pro Asp Glu Phe Phe
11723      1090      1095      1100
11725 Glu Asn Gly Tyr Leu Leu Asn Glu Leu Leu Gln Glu Leu Gly Glu Glu
11726 1105      1110      1115      1120
11728 Pro Leu Leu Lys Glu Gly Glu Asp His Phe Lys Arg Ser Thr Asn Leu
11729      1125      1130      1135
11731 Val Arg Leu Gly Glu Arg Asp Arg Gln Asn Arg Glu Lys Arg Glu Lys
11732      1140      1145      1150
11734 Glu Gly Tyr Phe Asp Leu Pro Gly Thr Leu Asp Met Lys Leu Gln Glu
11735      1155      1160      1165
11737 Leu Phe Glu Lys Arg Lys Gln Lys His Glu Ala Glu Gln Lys Ala Arg
11738      1170      1175      1180
11740 Ile Glu Lys Ala Leu Leu Gln Lys Ser Glu Gln Gln Glu Lys Arg Val
11741 1185      1190      1195      1200
11743 Glu Glu Arg Lys Gln Glu Glu Lys Arg Gln Ala Gln Asp Lys Ile Ala
11744      1205      1210      1215
11746 Lys Gln Val Glu Ile Ala Lys Glu Met Gln Arg Val Glu Glu Ile Arg
11747      1220      1225      1230
11749 Gln Arg Glu Lys Gln Leu Ala Ile Gln Leu Gln Glu Glu Glu Lys Lys
11750      1235      1240      1245
11752 Gln Gln Glu Glu Lys His Leu Ser Glu Glu Lys Lys Gln Ala Glu Gln
11753      1250      1255      1260
11755 Lys Gln Lys Ala Glu Glu Lys Val Ala Gln Glu Arg Leu Asp Ile Glu
11756 1265      1270      1275      1280
11758 Gln Gln Lys Ala Tyr Glu Glu Met Ala Lys Arg Glu Ala Glu Ala Ser
11759      1285      1290      1295
11761 Lys Asn Val Leu Leu Lys Ala Ile Asp Glu Glu Arg Pro Lys Val Glu
11762      1300      1305      1310
11764 Thr Asp Pro Leu Phe Arg Thr Lys Leu Lys Tyr Ile Asn Gln Asp Asp

```

## RAW SEQUENCE LISTING

DATE: 10/04/2001

PATENT APPLICATION: US/09/854,864

TIME: 08:21:02

Input Set : C:\Crf3\Datahold\09545199

Output Set: N:\CRF3\10042001\I854864.raw

```

11765      1315      1320      1325
11767 Tyr Ala Gly Ala Asn Tyr Phe Phe Asn Lys Val Gly Leu Asn Thr Lys
11768      1330      1335      1340
11770 Gly His Gln Lys Val Asn Val Leu Gly Asp Asn Tyr Phe Asp His Gln
11771 1345      1350      1355      1360
11773 Val Ile Thr Arg Ser Ile Glu Lys Lys Val Asp Asn His Leu Asn Gln
11774      1365      1370      1375
11776 Lys Tyr Asn Leu Ser Asp Val Glu Leu Val Lys Gln Leu Met Asp Asn
11777      1380      1385      1390
11779 Ser Thr Thr Gln Ala Gln Glu Leu Asp Leu Lys Leu Gly Ala Ala Leu
11780      1395      1400      1405
11782 Thr Lys Glu Gln Gln Ala Asn Leu Thr Gln Asp Ile Val Trp Tyr Val
11783      1410      1415      1420
11785 Lys Thr Lys Val Lys Gly Lys Asp Val Phe Val Pro Lys Val Tyr Phe
11786 1425      1430      1435      1440
11788 Ala Ser Glu Thr Leu Val Glu Ala Gln Lys Leu Gln Gly Leu Gly Thr
11789      1445      1450      1455
11791 Gly Thr Ile Arg Val Gly Glu Ala Lys Ile Lys Ala Lys Asp Val Val
11792      1460      1465      1470
11794 Asn Thr Gly Thr Leu Ala Gly Arg Lys Leu Asn Val Glu Ala Ser Asn
11795      1475      1480      1485
11797 Lys Ile Lys Asn Gln Gly Ser Ile Leu Ser Thr Gln Glu Thr Arg Leu
11798      1490      1495      1500
11800 Val Gly Arg Lys Gly Ile Glu Asn Val Ser Arg Ser Phe Ala Asn Asp
11801 1505      1510      1515      1520
11803 Glu Leu Gly Val Thr Ala Gln Arg Ser Glu Ile Lys Thr Glu Gly His
11804      1525      1530      1535
11806 Leu His Leu Glu Thr Asp Lys Asp Ser Thr Ile Asp Val Gln Ala Ser
11807      1540      1545      1550
11809 Asp Ile Lys Ala Lys Thr Ser Phe Val Lys Thr Gly Asp Val Asn Leu
11810      1555      1560      1565
11812 Lys Asn Thr Tyr Asn Thr Lys His Ala Tyr Arg Glu Lys Phe Ser Pro
11813      1570      1575      1580
11815 Ser Ala Leu Gln Val Ala Glu Leu Asp Val Ala Gly Leu Lys Val Pro
11816 1585      1590      1595      1600
11818 Leu Leu Gly Val Ser Val Ser Ile Gln Phe Ile Gln Ser Ile Leu Val
11819      1605      1610      1615
E--> 11821 Arg Gln Leu Gln Glu Gly Ser Ile Phe Glu Val Gly His Leu His Xaa
11822      1620      1625      1630
11824 Ala Val Asp Arg Arg Cys Glu Pro Ser Gly Glu
11825      1635      1640

```

## VERIFICATION SUMMARY

PATENT APPLICATION: US/09/854,864

DATE: 10/04/2001

TIME: 08:21:03

Input Set : C:\Crf3\Datahold\09545199

Output Set: N:\CRF3\10042001\I854864.raw

~~L:2 M:270 C: Current Application Number differs, Replaced Current Application No~~

L:2 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:2 M:289 W: Identifier Missing or Out-Of-Order, &lt;150&gt; PRIOR APP NO

L:0 M:201 W: Mandatory field data missing, APPLICANT NAME

L:0 M:201 W: Mandatory field data missing, TITLE INVENTION

L:0 M:201 W: Mandatory field data missing, FILE REFERENCE

L:100 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1

L:2151 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:16

M:332 Repeated in SeqNo=16

L:3766 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27

L:3767 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27

L:3770 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27

L:3771 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27

L:3774 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27

L:3775 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27

L:3882 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:28

M:340 Repeated in SeqNo=28

L:5261 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35

L:5262 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35

L:5273 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35

L:5274 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35

L:5289 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35

L:5297 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35

L:5345 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:36

M:340 Repeated in SeqNo=36

L:5385 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37

L:5386 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37

L:5401 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37

L:5402 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37

L:5433 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37

L:5435 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37

L:5461 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37

L:5463 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37

L:5484 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:38

M:340 Repeated in SeqNo=38

L:5609 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39

L:6532 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:47

L:9085 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:72

L:10782 M:258 W: Mandatory Feature missing, &lt;221&gt; not found for SEQ ID#:90

L:10782 M:258 W: Mandatory Feature missing, &lt;222&gt; not found for SEQ ID#:90

L:10782 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:90

L:10784 M:258 W: Mandatory Feature missing, &lt;221&gt; not found for SEQ ID#:90

L:10784 M:258 W: Mandatory Feature missing, &lt;222&gt; not found for SEQ ID#:90

L:10784 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:90

L:11503 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:102

L:11504 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:102

L:11821 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:103

## STATISTICS SUMMARY

PATENT APPLICATION: US/09/854,864

DATE: 10/04/2001

TIME: 08:21:03

Input Set : C:\Crf3\Datahold\09545199

Output Set: N:\CRF3\10042001\I854864.raw

Application Serial Number: US/09/854,864

Alpha or Numeric: Numeric

~~Application Class:~~

Application File Date: 09-11-2001

Art Unit: OIPE

Software Application: PatentIn

Total Number of Sequences: 165

Total Nucleotides: 169095

Total Amino Acids: 24948

Number of Errors: 24

Number of Warnings: 36

Number of Corrections: 2

## MESSAGE SUMMARY

201 W: 3 (Mandatory field data missing)  
258 W: 4 (Mandatory Feature missing)  
270 C: 1 (Current Application Number differs)  
271 C: 1 (Current Filing Date differs)  
289 W: 1 ( Identifier Missing or Out-Of-Order)  
332 E: 14 ((32) Invalid/Missing Amino Acid Numbering)  
340 W: 10 ((46) "n" or "Xaa" used: Feature required)  
341 W: 28 ((46) "n" or "Xaa" used)